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Book review

Windows in Buildings: Thermal, Acoustic, Visual and Solar Performance
T. Muneer, N. Abodahab, G. Weir and J. Kubie; Architectural Press, Oxford, UK, 2000.

To be sustainable environmentally, buildings need to have an inclusive relationship to their prevailing conditions of solar radiance and illuminance, ambient temperature and wind speed. The architectural outcomes, if done well, are fine buildings that are a bioclimatically appropriate mix of being optimally daylit, ventilated naturally and passively solar heated. Such a holistic approach is in marked contrast to the exclusion of the prevailing climate from many heavily serviced non-domestic buildings. Climate inclusive design has perhaps advanced most significantly in Northern Europe in terms of novel and innovative built forms and creative use of new technology. However in many parts of Africa and Asia, climate inclusive vernacular forms (or extensions of such forms) are yet to become re-established as the way forward for major non-domestic buildings.

At the heart of climate inclusive design has been the selection, sizing, orientation and optimal distribution of glazing and its technical specification. Innovative architectural solutions increasingly place new challenges both on building designers and the window supply industry. Such design imperatives, together with more stringent building code requirements, have been the drivers for major investment in advanced glazing research and development.

“Windows in Buildings” is thus a particularly timely book which captures current knowledge in this fast-moving field. It considers glazing in the context of the engineering design of windows for heating and daylighting. Issues related to architectural decisions are seen as largely outside the scope of this book. The emphasis is firmly on thermal and daylighting behaviour augmented with some attention to acoustics and environmental impact. The book includes a CD with 53 Excel workbooks and, following a short introductory chapter, the entire second chapter is devoted to Microsoft Excel. The core of the book is three chapters dealing with thermal properties of windows, windows and solar heat and windows and daylight. Acoustic properties of windows is dealt with in a short chapter most of which covers a general background in building acoustics. The penultimate chapter deals with life-cycle environmental assessment with very much a UK (and in some parts Scottish) emphasis, reflecting perhaps the chapter’s origins in the PhD thesis of one of the authors.

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A very short final chapter provides a commentry on solar radiation and daylight data on the accompanying CD-rom.

The examples used and climatic contexts assumed are almost invariably those of the UK. This, together with the very tight technical focus will limit the readership for whom it has broad relevance. However, the large proportion of introductory material renders this an appropriate text for those new to the field and, indeed, as support for relevant undergraduate courses.

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